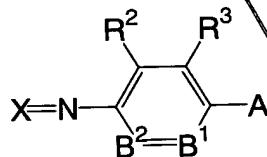


WHAT IS CLAIMED IS:

2 sub A1

1. An ink-jet ink which contains a coloring composition which is formed by dispersing coloring particulates in a water-based medium, and the coloring particulates containing a nonionic oil-soluble polymer, a hydrophobic high boiling point organic solvent having a boiling point of 150°C or more, and an oil-soluble dye.

2. An ink-jet ink according to claim 1, wherein the oil-soluble dye is represented in the following general formula (I):



wherein, X represents the residue of a color coupler;
A represents one of -NR⁴R⁵ and a hydroxyl group;
R⁴ and R⁵ represent respectively independently one of a hydrogen atom, an aliphatic group, an aromatic group, and a heterocyclic group;
B¹ represents one of =C (R⁶) - and =N-;
B² represents one of -C (R⁷) = and -N=;
R², R³, R⁶, and R⁷ represent respectively independently one of a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, -OR⁵¹, -SR⁵², -CO₂R⁵³, -OCOR⁵⁴, -

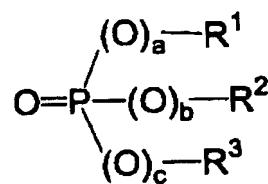
$\text{NR}^{55}\text{R}^{56}$, $-\text{CONR}^{57}\text{R}^{58}$, $-\text{SO}_2\text{R}^{59}$, $-\text{SO}_2\text{NR}^{60}\text{R}^{61}$, $-\text{NR}^{62}\text{CONR}^{63}\text{R}^{64}$, $-\text{NR}^{65}\text{CO}_2\text{R}^{66}$, $-\text{COR}^{67}$, $-\text{NR}^{68}\text{COR}^{69}$, and $-\text{NR}^{70}\text{SO}_2\text{R}^{71}$;
 $\text{R}^{51}, \text{R}^{52}, \text{R}^{53}, \text{R}^{54}, \text{R}^{55}, \text{R}^{56}, \text{R}^{57}, \text{R}^{58}, \text{R}^{59}, \text{R}^{60}, \text{R}^{61}, \text{R}^{62}, \text{R}^{63}, \text{R}^{64}, \text{R}^{65}, \text{R}^{66}$,
 $\text{R}^{67}, \text{R}^{68}, \text{R}^{69}, \text{R}^{70}$, and R^{71} represent respectively independently one of a hydrogen atom, an aliphatic group, and an aromatic group; and R^2 and R^3 , R^3 and R^4 , R^4 and R^5 , R^5 and R^6 , and R^6 and R^7 may be connected to each other and form rings.

3. An ink-jet ink according to claim 1, wherein the nonionic oil-soluble polymer is a vinyl polymer.

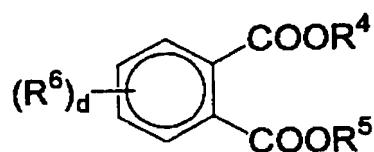
Sub P2
4. An ink-jet ink according to claim 1, wherein the hydrophobic high boiling point organic solvent is at least one hydrophobic high boiling point organic solvent selected from hydrophobic high boiling point organic solvents represented by following formulae [S-1] to [S-9]:

2 w/ H2
cont.

Formula [S-1]



Formula [S-2]



Formula [S-3]



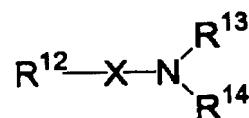
Formula [S-4]



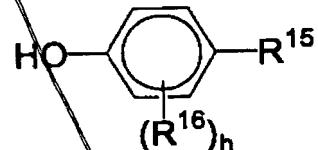
Formula [S-5]



Formula [S-6]



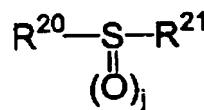
Formula [S-7]



Formula [S-8]



Formula [S-9]



Surf A2
cont

wherein: in the formula [S-1], R¹, R² and R³ each independently represents one of an aliphatic group and an aryl group, and a, b and c each independently represents 0 or 1;

in the formula [S-2], R⁴ and R⁵ each independently represents one of an aliphatic group and an aryl group, R⁶ represents one of a fluorine atom, chlorine atom, bromine atom, iodine atom, alkyl group, alkoxy group, aryloxy group, alkoxy carbonyl group and aryloxy carbonyl group, d represents an integer from 0 to 3, and, in a case where d is more than 1, one R⁶ may be different from another R⁶;

in the formula [S-3], Ar represents an aryl group, e represents an integer from 1 to 6, and R⁷ represents one of an e-valent hydrocarbon group and a hydrocarbon group that is mutually bonded by an ether bond;

in the formula [S-4], R⁸ represents an aliphatic group, f represents an integer from 1 to 6, and R⁹ represents one of an f-valent hydrocarbon group and a hydrocarbon group that is mutually bonded by an ether bond;

in the formula [S-5], g represents an integer from 2 to 6, R¹⁰ represents a g-valent hydrocarbon group other than an aryl group, and R¹¹ represents one of an aliphatic group and an aryl group;

in the formula [S-6], R¹², R¹³ and R¹⁴ each independently represents one of a hydrogen atom, aliphatic group and aryl group, X represents one of -CO- and -SO₂-, and one of a pair R¹² and R¹³ and a pair R¹³ and R¹⁴ may bond together mutually to form a ring;

Sub A2
Cont.

in the formula [S-7], R^{15} represents one of an aliphatic group, alkoxy carbonyl group, aryloxy carbonyl group, alkylsulfonyl group, arylsulfonyl group, aryl group and cyano group, R^{16} represents one of a fluorine atom, chlorine atom, bromine atom, iodine atom, aliphatic group, aryl group, alkoxy group and aryloxy group, h represents an integer from 0 to 3, and in a case where h is more than 1, one R^{16} may be different from another R^{16} ;

in the formula [S-8], R^{17} and R^{18} each independently represents one of an aliphatic group and an aryl group, R^{19} represents one of a fluorine atom, chlorine atom, bromine atom, iodine atom, aliphatic group, aryl group, alkoxy group and aryloxy group, i represents an integer from 0 to 4, and, in a case where i is more than 1, one R^{19} may be different from another R^{19} ;

in the formula [S-9], R^{20} and R^{21} each independently represents an aliphatic group or aryl group, and j represents 1 or 2.

5. An ink-jet ink according to claim 1, wherein an amount of content of the hydrophobic high boiling point organic solvent in the coloring composition is 25 to 95 % by mass based on the sum of the oil-soluble dye, the nonionic oil-soluble polymer, and the hydrophobic high boiling point organic solvent.

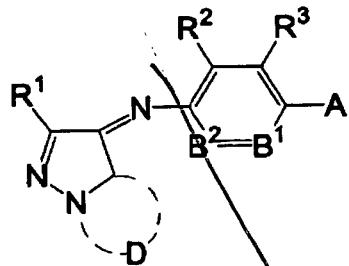
6. An ink-jet ink according to claim 1, wherein an amount of content of the nonionic oil-soluble polymer in the coloring composition is 1 to 70 % by mass based on the sum of the oil-soluble dye, the

nonionic oil-soluble polymer, and the hydrophobic high boiling point organic solvent.

7. An ink-jet ink according to claim 1, wherein an amount of content of the oil-soluble dye in the coloring composition is 1 to 70 % by mass based on the sum of the oil-soluble dye, the nonionic oil-soluble polymer, and the hydrophobic high boiling point organic solvent.

8. An ink-jet ink according to claim 1, wherein an average particle size of dispersed particles in the coloring composition is 100 nm or less.

Sub AB 9. An ink-jet ink according to claim 2, wherein the oil-soluble dye which is represented in said general formula (I) is a compound which is represented in the following general formula (II):



General Formula (II)

wherein, R², R³, A, B¹, and B² are synonymous with R², R³, A, B¹, and B² in said general formula (I);

2nd A3
cont'

R¹ represents one of a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, -OR¹¹, -SR¹², -CO₂R¹³, -OCOR¹⁴, -NR¹⁵R¹⁶, -CONR¹⁷R¹⁸, -SO₂R¹⁹, -SO₂NR²⁰R²¹, -NR²²CONR²³R²⁴, -NR²⁵CO₂R²⁶, -COR²⁷, -NR²⁸COR²⁹, and -NR³⁰SO₂R³¹; R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²², R²³, R²⁴, R²⁵, R²⁶, R²⁷, R²⁸, R²⁹, R³⁰, and R³¹ represent respectively independently one of a hydrogen atom, an aliphatic group, and an aromatic group;

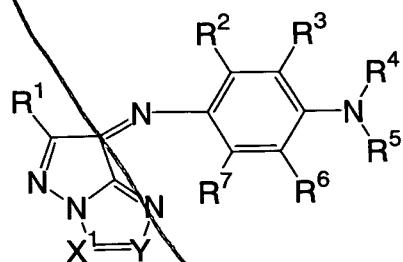
D represents an atom group which forms one of a five-membered nitrogen-containing heterocyclic ring and a six-membered nitrogen-containing heterocyclic ring which may be substituted for at least one of an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, -OR⁸¹, -SR⁸², -CO₂R⁸³, -OCOR⁸⁴, -NR⁸⁵R⁸⁶, -CONR⁸⁷R⁸⁸, -SO₂R⁸⁹, -SO₂NR⁹⁰R⁹¹, -NR⁹²CONR⁹³R⁹⁴, -NR⁹⁵CO₂R⁹⁶, -COR⁹⁷, -NR⁹⁸COR⁹⁹, and -NR¹⁰⁰SO₂R¹⁰¹;

the heterocyclic ring may further form a condensed ring with another ring; and

R⁸¹, R⁸², R⁸³, R⁸⁴, R⁸⁵, R⁸⁶, R⁸⁷, R⁸⁸, R⁸⁹, R⁹⁰, R⁹¹, R⁹², R⁹³, R⁹⁴, R⁹⁵, R⁹⁶, R⁹⁷, R⁹⁸, R⁹⁹, R¹⁰⁰, and R¹⁰¹ represent respectively independently one of a hydrogen atom, an aliphatic group, and an aromatic group.

10. An ink-jet ink according to claim 9, wherein the compound which is represented in said general formula (II) is a compound which is represented in the following general formula (III):

Jack A. B.
cont.

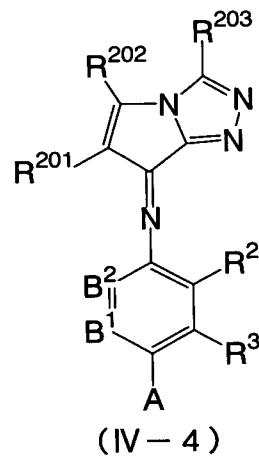
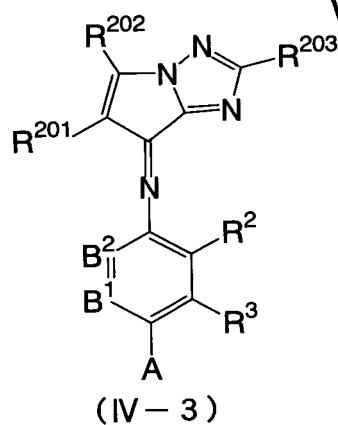
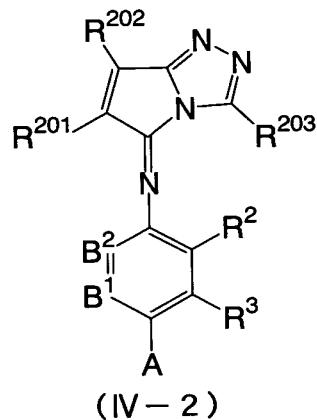
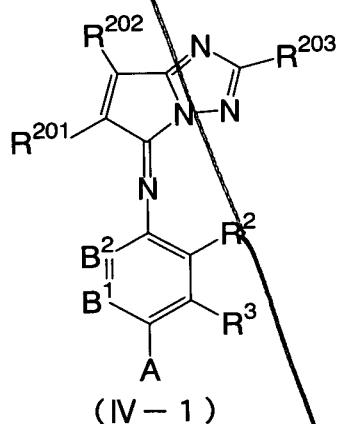


General Formula (III)

wherein, R¹, R², R³, R⁴, R⁵, R⁶, and R⁷ are synonymous with R¹, R², R³, R⁴, R⁵, R⁶, and R⁷ in said general formula (II);
X¹ and Y represent respectively independently one of -C (R⁸) = and -N=; R⁸ represents one of a hydrogen atom, an aliphatic group, and an aromatic group; and one of X¹ and Y is always -N=, and X¹ and Y are -N= at different times.

Geob AB
cont'd

11. An ink-jet ink according to claim 2, wherein the oil-soluble dye which is represented in said general formula (I) is at least one of compounds which are represented in the following general formulas (IV-1) to (IV-4):



wherein, A , R^2 , R^3 , B^1 , and B^2 are synonymous with A , R^2 , R^3 , B^1 , and B^2 in said general formula (I);

R^{201} , R^{202} , and R^{203} represent respectively independently one of a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, $-OR^{11}$, $-SR^{12}$, $-CO_2R^{13}$, $-OCOR^{14}$, $-NR^{15}R^{16}$, -

Sub A3

~~CONR¹⁷R¹⁸, -SO₂R¹⁹, -SO₂NR²⁰R²¹, -NR²²CONR²³R²⁴, -NR²⁵CO₂R²⁶, -COR²⁷, -NR²⁸COR²⁹, and -NR³⁰SO₂R³¹;~~

~~R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²², R²³, R²⁴, R²⁵, R²⁶, R²⁷, R²⁸, R²⁹, R³⁰, and R³¹ represent respectively independently one of a hydrogen atom, an aliphatic group, and an aromatic group; and R²⁰¹ and R²⁰² may be combined with each other and form a ring structure.~~

12. A coloring composition which is formed by dispersing coloring particulates in a water-based medium, and the coloring particulates containing a nonionic oil-soluble polymer, a hydrophobic high boiling point organic solvent having a boiling point of 150°C or more, and an oil-soluble dye.

13. A coloring composition according to claim 12, wherein said coloring composition is used for an ink composition.

Sub A4

14. An ink jet recording method, in which recording is carried out using an ink-jet ink which contains a coloring composition, the coloring composition being formed by dispersing coloring particulates in a water-based medium, and the coloring particulates containing a nonionic oil-soluble polymer, a hydrophobic high boiling point organic solvent having a boiling point of 150°C or more, and an oil-soluble dye.

15. An ink jet recording method according to claim 14, wherein the recording is carried out on a material to be recorded which is provided with an ink receiving layer on a supporting body, and the ink receiving layer includes a porous inorganic pigment.

16. An ink jet recording method according to claim 14, wherein the oil-soluble dye is represented in the following general formula (I):



General Formula (I)

wherein, X represents the residue of a color coupler;

A represents one of $-\text{NR}^4\text{R}^5$ and a hydroxyl group;

R^4 and R^5 represent respectively independently one of a hydrogen atom, an aliphatic group, an aromatic group, and a heterocyclic group;

B^1 represents one of $=\text{C}(\text{R}^6)-$ and $=\text{N}-$;

B^2 represents one of $-\text{C}(\text{R}^7)=$ and $-\text{N}=$;

R^2 , R^3 , R^6 , and R^7 represent respectively independently one of a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, $-\text{OR}^{51}$, $-\text{SR}^{52}$, $-\text{CO}_2\text{R}^{53}$, $-\text{OCOR}^{54}$, $-\text{NR}^{55}\text{R}^{56}$, $-\text{CONR}^{57}\text{R}^{58}$, $-\text{SO}_2\text{R}^{59}$, $-\text{SO}_2\text{NR}^{60}\text{R}^{61}$, $-\text{NR}^{62}\text{CONR}^{63}\text{R}^{64}$, $-\text{NR}^{65}\text{CO}_2\text{R}^{66}$, $-\text{COR}^{67}$, $-\text{NR}^{68}\text{COR}^{69}$, and $-\text{NR}^{70}\text{SO}_2\text{R}^{71}$;

$R^{51}, R^{52}, R^{53}, R^{54}, R^{55}, R^{56}, R^{57}, R^{58}, R^{59}, R^{60}, R^{61}, R^{62}, R^{63}, R^{64}, R^{65}, R^{66},$
 $R^{67}, R^{68}, R^{69}, R^{70}$, and R^{71} represent respectively independently one of a
hydrogen atom, an aliphatic group, and an aromatic group; and
 R^2 and R^3 , R^3 and R^4 , R^4 and R^5 , R^5 and R^6 , and R^6 and R^7
may be connected to each other and form rings.

17. An ink jet recording method according to claim 14, wherein
the nonionic oil-soluble polymer is a vinyl polymer.

18. An ink jet recording method according to claim 14, wherein
a specific inductive capacity of the hydrophobic high boiling point
organic solvent at 25°C is 3 to 12.

19. An ink jet recording method according to claim 14, wherein
an amount of content of the hydrophobic high boiling point organic
solvent in the coloring particulates is 25 % by mass or more.

20. An ink jet recording method according to claim 14, wherein
an average particle size of dispersed particles in the coloring
composition is 100 nm or less.